

CHARACTERIZING MIDDLE AND SECONDARY PRESERVICE TEACHERS' CHANGE IN INFERENCEAL REASONING

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ABSTRACT

This study characterizes how a cohort of 33 middle and secondary mathematics preservice teachers' inferential reasoning changed while enrolled in a statistics course designed for future teachers. Changes in inferential reasoning from pre- to post-assessments are analyzed and further elucidated by midcourse clinical interviews conducted with a stratified random sample of 12 participants. Using a modified SOLO taxonomy (Biggs & Collis, 1982, 1989), the average dominant level of inferential reasoning for the cohort shifted from Unistructural to Multistructural over the course. While 58% of all participants increased their level of inferential reasoning, growth was more pronounced for secondary preservice teachers. A relationship between informal and formal approaches to inferential tasks was determined as 80% of levels assigned to formal inferential task responses were concordant with the dominant informal inferential reasoning level. Classification of course tasks revealed an increased demand for adaptive reasoning with the introduction of formal inferential methods.